

CLAIMS:

1. System consisting of a gear pump (1), a filter (10) and a screw-type extruder (10), which consists of a screw (11) and a screw casing (12), for delivering elastomeric media, particularly caoutchouc, the screw-type extruder (10) being arranged in front of the gear pump (1) viewed in the delivery direction (6) of the pumping medium, characterized in that the filter (20) is arranged behind the gear pump (1).

2. System according to Claim 1, characterized in that a metal detector (23) is arranged in front of the gear pump (1), preferably in front of the screw-type extruder (10), and in that a control unit (22) is provided which is operatively connected with drives of the screw (11) and of the gear pump (1) and with the metal detector (23).

3. System according to Claim 1 or 2, characterized in that the screw (11) projects into the casing of the gear pump (1).

4. System according to one of Claims 1 to 3, characterized in that the filter (20) is arranged between the gear pump (1) and the spraying head (21).

5. System according to one of Claims 1 to 4, characterized in that the screw casing (12) has at least one conical part (15), and the screw (11) has, in the area of the conical part (15), at least one tapering, and in that, for the controlled feeding of energy into the pumping medium, the screw (11) is axially displaceable in the screw casing (12).

6. System according to Claim 5, characterized in that the tapering of the screw (11) as well as the conical part (15) are provided on the gear-pump-side end of the screw-type extruder (10).

7. System according to Claim 5 or 6, characterized in that the tapering of the screw (11) increases viewed in the delivery direction (6) of the medium.

8. System according to one of Claims 5 to 7, characterized in that the screw (11) has a double-helix-type construction.

9. System according to one of Claims 5 to 8, characterized in that a tangential plane on the screw (11) in the area of the tapering encloses an angle of from 2 to 10°, preferably 8°, with the center axis of the screw (11).

10. System according to one of Claims 5 to 9, characterized in that the length of the screw (11) is less than five times, preferably three times, the diameter of the screw (11).

11. System according to one of Claims 5 to 10, characterized in that the screw-type extruder (10) has a cylindrical part in addition to the conical part (15).

12. System according to Claim 11, characterized in that the ratio of the length of the conical part (15) to the length of the cylindrical part is between 1:2 to 1:5, preferably approximately 1:4.

13. System according to one of Claims 5 to 12, characterized in that the length of the cone (15) is less than the diameter of the screw (11).

14. System according to one of the preceding claims, characterized in that the screw (11) and/or the screw casing (12) each have one hollow space respectively with at least two openings (31, 33; 35, 36) for admitting and discharging a temperature adjusting medium (3).

15. Use of the system according to one of Claims 1 to 14 for delivering elastomeric media, particularly caoutchouc.

16. Method of operating the system according to one of Claims 2 to 14, characterized in that, when a metal piece is detected, the delivery of the pumping medium is interrupted in that the drives of the screw (11) and of the gear pump (1) are stopped.

17. Method of operating the system according to one of Claims 2 to 14, characterized in that a detection of a metal piece is indicated to an operator who intervenes in the transport process of the pumping medium for removing the metal piece without requiring an interruption of the production process.

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